

What is claimed is:

1. A method of cache management in a data storage system comprising:
 - providing a table comprising tags corresponding to cache slots in a cache memory;
 - storing a copy of the table in a local buffer in response to a request for allocation of
 - 5 one of the cache slots;
 - using the locally buffered table to make the requested cache slot allocation; and
 - using a set of control parameters associated with the locally buffered table to determine if the locally buffered table can be used for cache slot allocation in response to a subsequent request.

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2. The method of claim 1 further comprising:
 - providing user-selectable levels to control the degree of locally buffered table re-use, the user-selectable levels determining which values of the control parameters are used.
- 15 3. The method of claim 2 further comprising:
 - receiving a selection of one of the user-selectable levels by a user.
4. The method of claim 3 further comprising:
 - using the selected level to determine if one of the cache slots corresponding to tags in
 - 20 the locally buffered table can be used to store new data.

5. The method of claim 4 wherein using comprises:
 - comparing statistics associated with the tags in the locally buffered table to the control parameters.
- 5 6. The method of claim 5 wherein the control parameters include an indication of when the locally buffered table was last written.
7. The method of claim 5 wherein the tags in the table each include a flag which, if set, indicates if a corresponding one of the slots is available for use.
- 10 8. The method of claim 7 wherein the control parameters include a number of the tags in which the flag is set.
9. The method of claim 5 wherein the tags in the locally buffered table each include a timestamp indicating the time that the most recent hit occurred.
- 15 10. The method of claim 1 wherein the user-selectable levels include a range of locally buffered table re-use levels from most restrictive to least restrictive.
- 20 11. An apparatus, comprising
 - a stored computer program in memory instituting the steps of
 - providing a table comprising tags corresponding to cache slots in a cache memory;

storing a copy of the table in a local buffer in response to a request for allocation of one of the cache slots;

using the locally buffered table to make the requested cache slot allocation; and

using a set of control parameters associated with the locally buffered table to

- 5 determine if the locally buffered table for cache slot allocation in response to a subsequent request.

12. A data storage system comprising:

a plurality of physical resources;

10 a global memory comprising a cache memory, which includes cache slots to store data associated with tracks on the physical resources, and at least one table having tags corresponding to the cache slots;

a processor for managing writes to and reads from the plurality of physical resources using a locally buffered copy of the at least one table; and

15 wherein the processor is operable to associate control parameters with the locally buffered copy of the at least one table and is responsive to user-selectable levels to control a degree of re-use, the user-selectable levels determining which values of control parameters are used.

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